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Abstract of the Disclosure

An atherectomy burn has an operating diameter that is larger than the diameter of a catheter in which the burn is routed. The burn may include a polymeric balloon that is coated with an abrasive and that expands when the burn is rotated. When the burn is rotated, the polymeric tube expands by centrifugal force. The maximum expansion of the burn is controlled by an expansion mechanism. Various mechanisms are disclosed for controlling the maximum diameter of the burn thus preventing the burn from over expanding. In addition, the present invention includes a system for preventing the loose ablated particulate from reembolizing in the distal vasculature. The system includes an ablation burn that has abrasive disposed on the proximal end that is pulled back toward the guide catheter to ablate the lesion. The burn creates a seal when expanded to block the ablated particulate so that the aspiration system can remove the particulate from the patient vessel or stent. Alternatively, the burn system may include a self expanding seal that is deployed out of the aspiration sheath so that a slight vacuum can remove the large loose particulate form, the patient's vessel or stent.